



SR 30 (US 98) Elevated Roadway at Tyndall AFB Entrance

Contract E3Q67 | FPID 43168415201 & 43168415601



TECHNICAL PROPOSAL – VOLUME 1 OF 3 *(Written Technical)*

Submitted April 20, 2018



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Section 1

Project Approach





INTRODUCTION

Superior Construction Company Southeast, LLC (SUPERIOR) and GAI Consultants, Inc. (GAI) (**The SUPERIOR Team**) are pleased to present this technical proposal for the SR 30 (US 98) project at the Tyndall Air Force Base (TAFB) Entrance in Bay County, FL. We are confident our proposal addresses the Florida Department of Transportation (FDOT) District 3 (D3) vision, expectations, and goals. Our team is committed to being partners with D3. Our design solutions exceed the intended scope through innovation, reducing utility impacts, enhancing safety and minimizing environmental impacts. Highlights in our proposal are shown in **Table 1**:

Table 1 – Project Goals & SUPERIOR Team Approach

Goal	SUPERIOR Team Approach
Maintain Tyndall AFB Operations Throughout Construction	<ul style="list-style-type: none"> Assign a dedicated liaison to proactively coordinate with Tyndall AFB Streamline TTCP design to maintain Level of Service and capacity Develop a plan that prioritizes construction of security fencing and minimizes contractor access Develop a TTCP plan that reduces temporary gate closures
Optimize Single-Point Urban Interchange (SPUI)	<ul style="list-style-type: none"> Improve the RFP concept by developing a SPUI design that allows for concurrent left turns on all approaches Provide a design that exceeds RFP requirements by also accommodating WB-62FL turning movements for right-turn lanes Include a design that allows for a shorter bridge, shallower beams, and lower profile
Reduce Utility and Environmental Impacts	<ul style="list-style-type: none"> Avoid Tyndall AFB-owned sewer lines Modify WB on/off-ramp design, avoiding existing buried fiber optic lines Modify the drainage design reducing utility impacts (water, gas, fiber) from the 35 shown in the RFP to 20 with the SUPERIOR design, a 43% reduction Modify lateral ditch grading to eliminate 1.3 acres of wetland impacts (43% reduction) and associated mitigation costs

DESIGN

The SUPERIOR Team has a complete understanding of the issues surrounding this project as well as the commitments made to stakeholders. The primary project objective is to provide improved access to TAFB by constructing a grade separated interchange at the intersection of SR 30 and Tyndall Dr./Airey Ave. (Tyndall Dr.). SR 30 will also be elevated over Louisiana Avenue (Louisiana Ave.), providing a secure connection between the Flightline and the Support sides of the base. Two through lanes will be carried overtop each bridge, and 7' paved shoulders will be provided along SR 30 to accommodate bicycle traffic.

STRUCTURES DESIGN

The SUPERIOR Team will provide structural design for the SR 30 bridges over Tyndall Dr. and Louisiana Ave, wraparound bridge MSE walls, traffic signal structures, and all other miscellaneous structures required on the project. Our structures design will deliver efficient and low-maintenance bridge systems to provide optimum value to FDOT. Our bridge design will be developed in concert with our Temporary Traffic Control Plan (TTCP), prioritizing safety during bridge construction.

Bridges over Tyndall Drive/Airey Avenue and Louisiana Avenue: Both new bridges will consist of a single span cast in place deck atop Florida-I Beams (FIB), with abutments supported on pre-stressed concrete piles located behind MSE walls. The SUPERIOR Team will provide 36" TL-4 Single Slope traffic railing barrier at both sites with

curved fences in accordance with RFP requirements. The new design will also account for the additional LRFD Operational Importance Factor.

ROADWAY DESIGN AND SAFETY

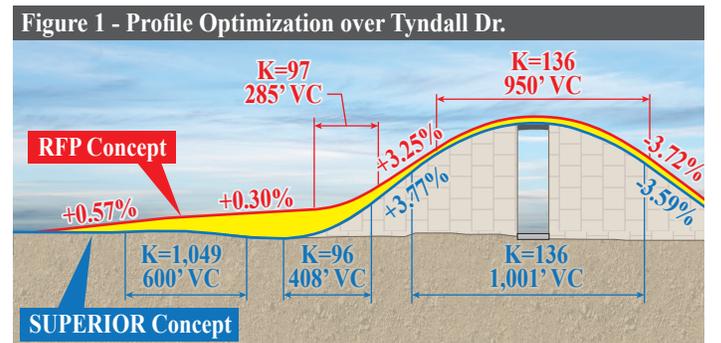
SR 30 (US 98): The roadway will transition from four travel lanes west of Tyndall Dr. to two travel lanes approaching the SPUI. The design speed along SR 30 will be 50 mph. The project extends approximately 1.25 miles along SR 30 and includes the milling/resurfacing of the existing pavement. South of the intersection on Airey Ave, two NB lanes, two NB left turn lanes and one NB right turn lane will be provided with no impacts to the Support side entry gate. North of the intersection on Tyndall Dr., one SB travel lane, one SB right turn lane, and one SB left turn lane will be provided without impacting the TAFB entry gate. All travel and turn lanes will be 12' minimum width. The ramps will vary from one to two lanes with a design speed of 35 mph.

SPUI Optimization: The RFP requires that the SPUI interchange accommodate WB-62FL for left turning movements, including provision for a 5' separation between opposing outer left turn lanes. Additionally, 4' separation between adjacent turning movements will be provided as described in the RFP. While these turning movement separation requirements were not met by the RFP Concept design, the SUPERIOR Team's modified SPUI design meets or exceeds all of the turning movement requirements and optimizes the overall interchange. This modified SPUI interchange provides several **KEY advantages**:

- ▶ Shortens bridge to a single 146' span and lowers profile by utilizing FIB 63 in lieu of FIB 78 beams
- ▶ Reduces potential camber issues associated with larger beams
- ▶ **Accommodates WB-62FL for all RFP required turning movements, and exceeds the RFP by accommodating WB-62FL for all right turn movements**
- ▶ Eliminates conflict with existing buried fiber optic at the on/off ramps
- ▶ Modifies SR 30 alignment, providing a wider envelope for maintenance of traffic, minimizing impacts to the traveling public and improving project safety

The SUPERIOR Team's concept also optimizes the vertical alignment on SR 30 (see **Figure 1**). This improved profile:

- ▶ Eliminates 8,000 CY of embankment material/off-site borrow
- ▶ Allows an optimized Temporary Traffic Control Plan
- ▶ Eliminates 10,250 SF of MSE Wall and associated select backfill, reducing construction time, cost, and impacts to the traveling public
- ▶ Reduces temporary construction easement (TCE) for driveway at Sta. 964+10 by 33' due to shorter driveway connection
- ▶ Decreases overburden on marginal soils reducing risk of settlement



Safety: The SUPERIOR Team concept enhances safety in several different ways:

- ▶ Incorporate a sidewalk on both sides of SR 30 from the beginning of the project to the intersection of Tyndall Dr., as well as sidewalks along Tyndall Dr. and ADA ramps
- ▶ Provide bicycle accommodations along the 7' wide shoulders of SR 30

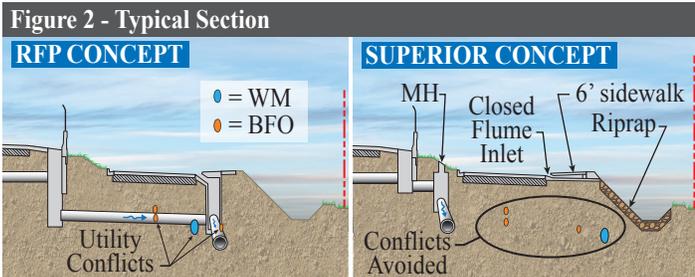
- ▶ Accommodation of WB-62FL for all right turns
- ▶ Eliminates over 1,000 loads of fill material hauled to the project
- ▶ Use of vertical signal heads attached to bridge eliminates overlapping conflicts with horizontal heads

Landscaping: The SUPERIOR Team will provide a Landscape Opportunity Plan (LOP) addressing FDOT’s “Bold” initiative and the TAFB Integrated Natural Resources Management Plan. We will remove all Category 1 invasive exotics as defined by the Florida Exotic Pest plant Council and as identified in the LOP.

DRAINAGE DESIGN

This project lies within both the Fred Bayou and the St. Andrew Bay Basins, ultimately discharging to East Bay and Hog Sound Island, respectively. SR 30 is on a ridge line, with stormwater draining away from the roadway to the north and south. The SUPERIOR Team anticipates an Environmental Resource Permit for construction activities permitted with the Federal Department of Environmental Protection (FDEP) and North West Florida Water Management District (NFWFMD). Stormwater treatment and attenuation will be provided within dry ponds and ditches, designed to meet all TAFB Bird Aircraft Strike Hazard and Federal Aviation Administration (FAA) Advisory Circular 150/5200-33B requirements to minimize the potential bird strikes to aircraft. No floodplain impacts are anticipated for the project as FEMA Maps indicate the project is within Zone X (outside the 500-year floodplain).

The SUPERIOR Team has developed several drainage design improvements with the goal of reducing construction time and cost, minimizing utility impacts and reducing future maintenance cost/issues. Our proposed design utilizes an open drainage system in lieu of the closed drainage system in the RFP Concept in many locations of the project, greatly reducing utility impacts and construction cost/time. Where a closed drainage system is necessary, our design avoids utility impacts by utilizing conflict structures (per FDOT Standard Index 307) and closed flume inlets in lieu of a conventional pipe and curb inlet system. This creates an offset from existing utilities and avoids impacts (see Figure 2).



The RFP concept design includes the use of french drains west of the interchange, which are costly to install, and often even more costly to maintain. The SUPERIOR Team’s drainage design eliminates the french drains by utilizing the proposed dry pond site, located in the SE quadrant of the SR 30/Louisiana Ave. Interchange, to provide compensatory stormwater treatment.

The SUPERIOR Team has extensive knowledge in designing drainage systems within and around MSE walls. The drainage systems within the MSE wall sections at Tyndall Dr. and Louisiana Ave. have been designed to avoid Wall Zone “C” (no pipes allowed as illustrated in the FDOT Drainage Manual). Longitudinal pipes within the MSE wall are designed to be at minimum depth to remain in Wall Zone “A”. Pipes that fall within Wall Zone “B” will be conveyed transversely and designed properly to meet AASHTO LRFD criteria. All pipes materials within Wall Zones “A” and “B” will be either PVC or Polypropylene.

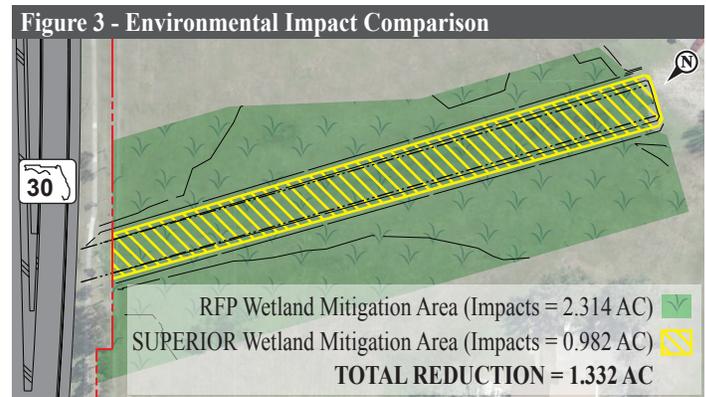
Pond Fencing: An important aspect of the pond construction is the need to provide access by FDOT maintenance forces. Pond 1 lies within the boundary of TAFB’s Support side security fence and will require

separate access that does not penetrate the secure envelope. This will be closely coordinated with FDOT and TAFB personnel to develop a mutually acceptable solution, which will likely include a roadside gate and associated maintenance access road, and full security fencing around all boundaries of the pond.

ENVIRONMENTAL DESIGN

The RFP concept results in 2.314± AC of wetland impacts at the lateral ditch outfall along the south side of the project, west of Tyndall Dr., mitigation for which (as described in the RFP and Addendum 8), is the responsibility of the Department. Based on our research of the area, there are no mitigation banks servicing the project basin, amplifying the challenges associated with this important issue.

Our Team’s approach is to minimize wetland impacts through the use of an optimized ditch section and a tight construction envelope, **reducing these impacts by nearly 43% (1.33± AC) (see Figure 3)**. If the Senate Bill were to be utilized for mitigation, this translates to over \$150,000 in potential cost savings realized by the Department.



Listed species surveys will be coordinated with Tyndall Natural Resources (TNR) and the District Environmental Management Office (EMO), and will include the project corridor, staging areas, and proposed perpetual easements (including the identified pond site). Impacts to listed species, particularly black bear, gopher tortoise, and bald eagle, are not anticipated. Impacts to nesting sea turtles will be mitigated in accordance with US Fish and Wildlife (USFW) guidelines through use of cutoff and shielded lighting (both during and after construction) as well as light sources outside of the spectrum of affecting color.

TRAFFIC DESIGN

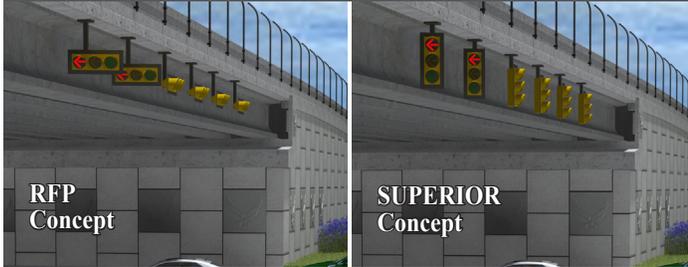
Traffic Operations: This section of SR 30 primarily serves the needs of TAFB, with traffic counts dropping significantly to the east of the interchange. The base runs a 24-hour-a-day operation with regular shift changes, creating heavy movements to and from the Panama City urban area to the west, resulting in highly directional use of the interchange. Because of the nature of operations, there is a high volume of trucks making left turns in and out of the base.

To better accommodate larger trucks, the SUPERIOR Team proposes to include wider right turn lanes at all quadrants to provide for a WB-62FL design vehicle. This accommodation goes above the RFP and Florida Intersection Design Guide requirements which only require design for WB-40 vehicles. This adds value to the intersection by eliminating the damage to curbs and sidewalks due to over tracking of the larger vehicles, thus reducing future maintenance costs for repairs.

Signalization/Intelligent Transportation System (ITS): The RFP signalization concept plans show installation of horizontally oriented heads on the bridge structure, angled to face the left turn lanes. This design requires rotation of the heads against the bridge beam, which will cause a visible obstruction to the adjacent heads (see Figure 4). The

SUPERIOR Team has addressed this issue by positioning the signal heads vertically on the bridge beam. This modification permits each signal head to be rotated to the proper angle to be viewed by oncoming traffic, without obstruction from the bridge beam and without impairing the view of the adjacent signal heads. The near side signal heads (pedestal mounted) will be necessary to provide proper visibility for traffic on the ramps approaching the intersection. Pedestal mounted signals will also be installed on the far side of the intersection to reinforce movements for turning traffic.

Figure 4 - Traffic Signal Heads



The RFP also requires installation of ITS conduits along SR 30 within the project limits for future use. Design and ultimate location of these conduits will be closely coordinated with adjacent utility owners and the Bay County Traffic Engineering Department.

Lighting: The project will include lighting of SR 30 at the interchange with underdeck lighting beneath the bridges. Fixtures will be conventional with LED lighting and will apply "Dark Skies" initiatives to reduce as much light pollution as possible. Vertical illuminance criteria will be applied to all crosswalk areas in accordance with current FDOT criteria. FAA criteria will be applied and approval obtained (form 7460-1) to verify clear airspace requirements. In addition, all street lighting will be closely coordinated with TAFB operations to assure no impacts to tower operations, and the newly installed entry sign will be lit.

During design, the SUPERIOR Team will perform site surveys using a bucket truck and sample luminaire to precisely identify mounting heights that will minimize sea turtle nesting impacts.

This innovative approach goes a step beyond conventional methods, and provides an opportunity for USFW personnel to physically participate in the optimization process. As a value-added enhancement, "house side" glare shields will be installed on all lighting fixtures on the south side of SR 30 and a negative tilt added to all lighting on the north side, providing an additional measure of protection for these endangered creatures.

TYNDALL AFB SECURITY FENCE PLACEMENT DESIGN

The SUPERIOR Team will construct security fencing that meets the requirements set forth in the Unified Facilities Criteria Section 4-022-03. The final design and location of all security fencing will be coordinated and approved by TAFB prior to construction.

Perimeter fencing will be constructed along the entire limits of the right-of-way/easement and at the Louisiana Ave. Bridge. Curved top fencing will be provided at both bridge locations. Once the Louisiana Ave. Bridge is completed, the team will proceed to constructing the new perimeter fence to secure the connection between the Flightline and Support side. Perimeter fencing will be established around the limits of the pond prior to construction to isolate the construction from the secure area on TAFB.

DESIGN COORDINATION PLAN MINIMIZING DESIGN CHANGES

Over the past 15 years, SUPERIOR and GAI have worked together on 10 significant FDOT Design Build projects which total over \$250M in construction value. We will utilize this experience to optimize the

benefits of the Design-Build (DB) process, and provide the Department with the best value while coordinating within our Team, FDOT, TAFB, and outside stakeholders. Our coordination plan will be implemented by Jeremy Andrews, PE (Construction DB Coordinator) during design, and Evan Lawrence (Construction PM) during construction. We will ensure exceptional communication with FDOT and all stakeholders. To accomplish our expedited design schedule, we will leverage our Team's construction knowledge and design expertise to develop highly-constructible designs that meet criteria, conform to plans and specifications, and optimize schedule. We will partner with FDOT through a project kickoff meeting, informal over-the-shoulder reviews, and regular progress meetings.

Internal Coordination Process: Our design coordination process will advance design completion; ensure timely constructability input/reviews; facilitate permitting and third-party coordination; minimize field changes; and provide continuous quality control.

The keys to our Coordination Plan include:

- ▶ **Critical component pre-bid design development** – The SUPERIOR Team works to identify and fully develop design components which represent the highest risk for changes during construction, addressing that risk within our design and construction plan
- ▶ **Component plans married to project schedule** – Plan component submittals will align with the actual construction schedule, focusing on delivery of specific plan groups to maintain field progress
- ▶ **Weekly interdisciplinary design review and coordination meetings** – Bring discipline leads together to share innovative concepts, update plans, coordinate and monitor schedule milestones
- ▶ **Constructability reviews** – Evaluate function, safety, efficiency, and specification conformance prior to any submission of design components
- ▶ **Strong leadership** – Luis Tellechea, PE (DB Design PM) and Jeremy Andrews, PE (DB Coordinator) will review and compile the comment sheets and marked-up drawings
- ▶ **Comment resolution** – A formal comment review meeting will be scheduled with the Team for final disposition and a Final "Submittal Package" Compliance Review Matrix will ensure compliance with package submittal requirements

Local Agency and TAFB Submittals: The SUPERIOR Team is intimately familiar with our role in obtaining plan reviews from local agencies and coordinating with these officials. This project is unique as it also includes collaboration with TAFB during all aspects of design and construction. We will meet this challenge head-on by appointment of a designated base liaison who manages all correspondence and communication with TAFB personnel. This allows for clean, unfettered coordination and helps to ensure compliance with commitments throughout the length of the project.

FDOT Comment Review: During design, weekly progress meetings with FDOT will be held to confirm expectations and commitments. Design submittal meetings with FDOT will expedite the review process, and will ensure the design meets and is consistent with all commitments and RFP requirements. The SUPERIOR Team will upload revised plan sheets into ERC, along with our responses in order to gain reviewer approval prior to the next submittal.

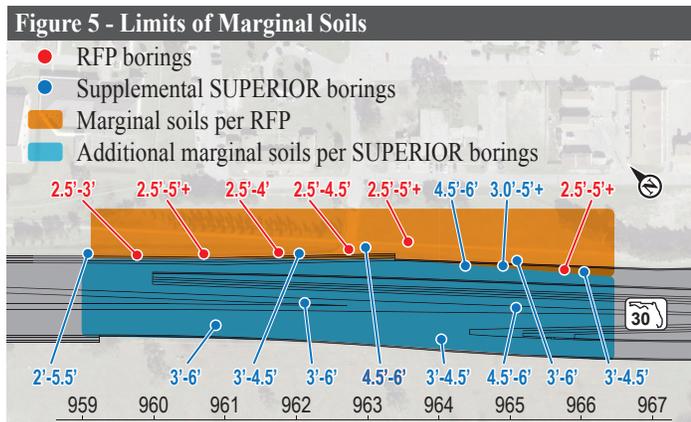
Partnering Process: Our Team proposes a formal partnering process for this project. We will hold an initial kick-off meeting and subsequent monthly meetings coordinated with FDOT. We will work with the Department to keep project stakeholders updated and informed through various public information forums and meetings. Maintenance of Traffic activities will be closely coordinated with TAFB and accommodate special events including the TAFB Family Day, Spring Break, and Thunder Beach-Spring/Fall.

GEOTECHNICAL INVESTIGATION PLAN

We will develop a comprehensive geotechnical investigation plan during the design phase, providing assurance that all work is performed in accordance with FDOT requirements and the RFP. This will allow our team to take full

responsibility for the geotechnical design and construction of this project. Project specific issues and solutions, based on our local experience, site visits, preliminary investigations, and review of available data, are outlined below:

► **Marginal soils (A-8) within roadway areas:** Our team performed additional delineation borings and laboratory testing to better define the limits of the marginal soils shown in the geotechnical information provided in the RFP (see Figure 5). **The additional exploration indicated the soils in question were generally sandy soils with a marginal organic content.** Our remedial plan for these marginally organic soils proposes to utilize geogrid to address the potential impacts from these soils while accelerating construction and meeting the special geotechnical considerations of the RFP. Shallow high organic soils will be over-excavated and backfilled with clean fill.



► **Potential for embankment/foundation settlement due to very soft clayey/silty soils:** The Team's innovation to optimize the SPUI and reduce bridge lengths will allow the profile to be lowered from the concept plans. This reduced embankment will decrease the potential for settlement in sections of the MSE wall, therefore reducing the area and size of the preloading/surcharging program. The embankment/MSE wall areas that require preloading or surcharging will be monitored using settlement plates in the fill areas and survey targets on the walls to ensure settlements are within acceptable limits prior to proceeding with pile driving and final construction. During final design, additional borings will be performed to determine if there is a need to modify our embankment construction approach, ensuring all design and construction activities meet FDOT requirements.

GEOTECHNICAL LOAD TEST PROGRAM

Our Team will perform a comprehensive load test program which will include PDA testing at each bent location in accordance with FDOT requirements. This PDA data will be utilized to develop accurate pile lengths and driving criteria. Should pile rebound conditions be encountered during driving, set-checks with PDA will be performed to verify the pile capacities meet or exceed the required Nominal Bearing Resistance. All foundation members will be monitored by CTQP Certified inspectors in accordance with SUPERIOR's approved Quality Control Plan and Pile Installation Plan.

Protection of Structures. Settlement, vibration, and noise monitoring will also be critical components during pile driving, roadway compaction, sheeting installation, excavations, and other vibration-inducing events. A Settlement and Vibration Monitoring Plan (SVMP) will be prepared to establish vibration threshold limits as well as identify areas requiring pre/post-construction surveys and monitoring. The Preliminary Engineering Report provided a list of 16 structures which were designated as vibration sensitive sites. These 16 structures as well as two additional unnamed masonry/brick structures will be reviewed with respect to their location to the planned construction when developing the site specific SVMP. The SVMP will address excavations (drilled shafts, utility cuts, etc.) planned

adjacent to or near an existing structure to prevent settlement/distress of existing structures.

Potential down-drag associated with pile installation will be managed by installation of casings in accordance with section 455 of the specifications. This approach will mitigate potential interaction between the pile installation and the expected 4-5" of settlement.

MINIMIZING IMPACTS THROUGH DESIGN

Environment: The SUPERIOR Team's profile optimization lowers vertical grades at the gore areas. This allows for a tighter construction envelope, reducing the overall footprint of the project and ultimately reducing environmental impacts. Our redesign of the lateral ditch and innovative sea turtle protection approach (lighting) further reduce wetland and species impacts throughout the corridor.

Public: The SUPERIOR Team has developed design solutions that reduce construction time and thus exposure of the public to construction operations. These include:

- Optimized Interchange design that reduces bridge length
- Optimized profile that reduces embankment, MSE walls
- Open Drainage system eliminates drainage pipe and structure work
- Modified drainage design which eliminates utility conflicts/relocations and associated schedule impacts
- Modified ramp geometry that avoids utility conflicts
- Simple two-phase TTCP plan maximizes work completed within each phase while also reducing traffic shifts and associated impacts to traffic
- Use of Geogrid addresses marginal soils on the project, eliminating time-consuming excavation of this material

Additional design solutions reducing impacts to the public include:

- Optimized SPUI design that provides all required separations for turning movements, ensuring driver safety
- An expanded SPUI configuration that accommodates a WB-62 FL for all turning movements, including right turns, exceeding RFP requirements
- A slight offset of SR 30 alignment that provides additional space for TTCP and increases public safety
- Optimized profile eliminates over 1,000 loads of material being delivered to the project site

Structures: During design, the SUPERIOR Team will identify potential vibration receptors and complete a detailed site survey to determine any additional vibration sensitive locations aside from those identified in the RFP. This information will be carried into our TTCP plan, assuring that critical TAFB operations are not adversely impacted by pile driving or vibratory roller operations.

Tyndall AFB Traffic: The SUPERIOR Team's innovative designs are structured around maintaining TAFB access and operations, including:

- A traffic control plan that eliminates weekend base closures during beam placement at the Tyndall intersection
- A traffic control plan at Louisiana Ave. providing unimpeded TAFB traffic during new bridge construction
- A design that allows WB-62FL vehicles to access the Flightline side and Support side gates from all directions, including right turns

For the concrete construction at the intersection, our innovative TTCP plan allows the Flightline side gate to remain open throughout construction.

TEMPORARY TRAFFIC CONTROL PLAN DESIGN

Our adjustments to the profile and ramp alignments will allow us to construct the Tyndall interchange and Louisiana overpass in two basic phases instead of the four phases envisioned by the RFP concept. This approach provides for faster and more efficient construction while reducing the number of complex traffic pattern changes for motorists.

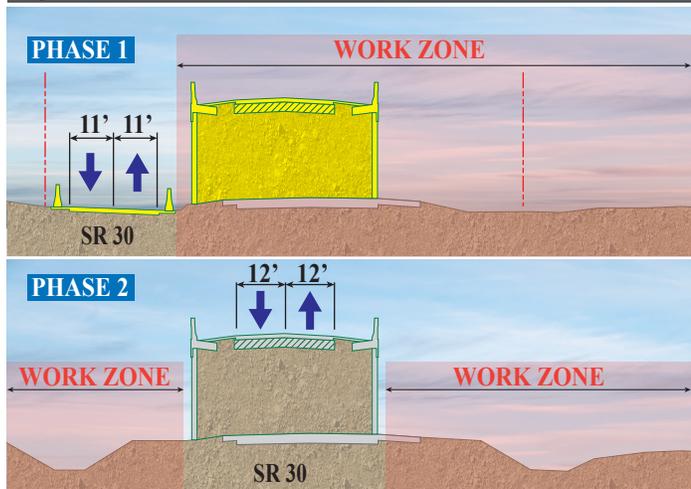
Louisiana Overpass

The overpass at Louisiana Ave. will be built in its entirety during a single phase. This construction will be prioritized to occur early in the schedule, connecting the Support and Flightline sides of the base. This connection will help to expedite construction of the concrete pavement at Tyndall Dr., providing an alternate route of base connectivity during limited closures of traffic movements.

Phase 1: The Phase 1 work includes shifting SR 30 traffic onto a temporary roadway, running on the north side of Louisiana Ave., while the new overpass, MSE walls, and approaches are built. This will allow the SUPERIOR Team to construct the new pond south of SR 30 and haul the associated embankment material from the pond to the Louisiana overpass without crossing traffic, increasing safety while reducing construction time and cost.

Phase 2: With traffic shifted to the new overpass which was completed in its entirety in Phase 1, we will complete grading/swale work on the north and south side of SR 30. In addition, we will complete work on Louisiana Ave. itself and install the required security fencing to provide the secure connection between the Flightline side and Support side.

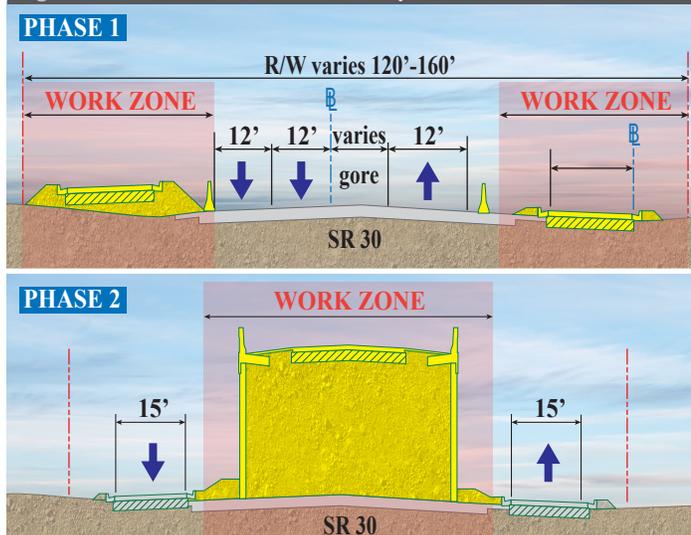
Figure 6 - Maintenance of Traffic at Louisiana Ave.



Tyndall Drive Interchange

Phase 1: The new ramps for the Tyndall interchange will be constructed outside the footprint of the existing roadway. This will allow the intersection to operate under the existing signal. This work also includes placing the concrete pavement for the new right turns, taking advantage of available work zone areas. Pedestrian access will be maintained on at least one side of Tyndall Dr. at all times.

Figure 7 - Maintenance of Traffic at Tyndall Dr



Phase 2: SR 30 traffic is shifted onto the Louisiana overpass to the east and the newly constructed ramps at Tyndall Dr., allowing construction of the roadway approaches, MSE Walls and bridge structure over Tyndall Drive. The intersection at Tyndall Dr. will use temporary signals and operate as a modified SPUI. Traffic will ride over the concrete pavement placed in Phase 1, so asphalt wedges will be used to provide a smooth transition from new concrete to existing asphalt where necessary. Pedestrian access will be maintained along the east side of Tyndall Dr. with crosswalks positioned so they can easily be seen by approaching traffic.

Final Activities: With all of the traffic placed into its final configuration, the remaining concrete will be placed within the Tyndall Dr. intersection. This work will be completed under nighttime lane closures and in close coordination with the base. (please reference Page 7 of this proposal for detailed phasing of concrete construction on Tyndall Dr.). Other final activities include placing the final friction course and the permanent pavement markings.

AESTHETICS

The wraparound MSE retaining walls at the bridge approaches will include application of the Air Force symbol similar to what was done on SUPERIOR's Hurlburt Field Interchange project. A smooth surface for the emblems was used on that project to provide a clean, quality casting that was not possible to attain along with a fractured fin. We propose to utilize the same approach at TAFB. Location and spacing of the symbols will be in accordance with the RFP and will be closely coordinated with TAFB (see Figure 8). At Airey Ave./Tyndall Dr., a minimum of four symbols will be provided at each quadrant. At Louisiana Ave., four symbols will be provided for each quadrant that are visible to vehicles traveling on Louisiana Ave. Air Force shields will also be affixed to the four cheek walls of each bridge.



UTILITY COORDINATION AND DESIGN

The SUPERIOR Team has a clear understanding of utility conflicts presented in the utility conflict matrix. Our design and construction team members, including Utility Coordination Manager John Murphy and Construction Project Manager Evan Lawrence, have experience working with all nine of the Utility Agency Owners (UAOs) listed in the RFP as well as the Department's Utility Coordination staff.

In addition to the TAFB communication lines, which **will NOT be impacted**, the Team will regularly coordinate with all other UAOs in the corridor to minimize impacts and avoid relocations. This outreach has already been started and will continue after the award of the project, using concept plans delivered as part of the Technical Proposal to build a plan to work with these key stakeholders. Key coordination efforts are already underway with the following utilities:

- ▶ Tyndall AFB Water, Sewer, Electric, Gas, and Communications have been identified as high priority facilities. Maintaining the integrity of these lines will be at the forefront of our daily Utility Coordination efforts. While the conflict Matrix has identified Tyndall Facilities as being in conflict, the Design Build Team will work closely with TAFB to mitigate all conflicts.
- ▶ Bay County Public Utilities has several large transmission water mains throughout the limits of this project. These facilities, if impacted, will become costly to this utility partner and have the greatest potential to create scheduling impacts. Our team will work closely with Bay County and adjust/modify our design to avoid conflicts where possible.

The SUPERIOR Team has developed a preliminary design that greatly reduces these impacts, reducing the Department's burden of reimbursing these UAOs for relocations.

MINIMIZATION OF UTILITY IMPACTS

During the proposal phase, the SUPERIOR Team conducted additional utility test holes to better define utility locations within the corridor. As a result, through design modifications, we have already significantly reduced utility impacts from the RFP concept as outlined below. We anticipate further reduction of impacts during final design as additional utility test holes are completed.

- ▶ **Drainage Design Optimization:** The RFP identified 35 utility conflicts associated with the drainage design along SR 30. Our team reduced the drainage utility conflicts to 20 locations (43% reduction). These conflicts were reduced following verification of utility locations and the innovative utilization of drainage flumes, swales in lieu of pipes/structures and re-routing of pipes.
- ▶ **Optimization of SPUI:** The SUPERIOR team design realigns the westbound on/off ramps at Tyndall Dr. towards the north which will reduce impacts to the buried fiber optic lines along the ramp. The shift in alignment moves the pavement envelope away from these utilities.

DESIGN CONSIDERATIONS WHICH IMPROVE RECYCLING AND REUSE OPPORTUNITIES

The SUPERIOR Team consistently looks for ways to lessen impacts to the environment, including re-use of materials wherever possible. In the case of this project:

- ▶ Pavement mix designs will be optimized to allow for recycled asphalt use where possible
- ▶ Removed ground mounted signs can be reused and will be returned to FDOT maintenance
- ▶ Removed luminaires from the intersection will be returned to FDOT for use by maintenance forces elsewhere in the District
- ▶ Removed guardrail panels (in good condition) will be returned to FDOT for use by maintenance forces to repair broken sections of rail
- ▶ Asphalt millings will be utilized for staging areas, temporary access roads, crane staging pads, and for recycled asphalt mixes, etc.
- ▶ Existing trees will be salvaged and replanted when possible

CONSTRUCTION

SAFETY

Our corporate history demonstrates proper planning and training leads to better safety. SUPERIOR's recently updated EMR of 0.57 indicates the rate of workplace accidents is 43% better than the average industry rate. The planning for safety begins during the technical proposal and design stage to ensure that workers are not placed in unsafe locations.

The SUPERIOR Team will employ a full time, on site safety manager who will assist all crews in planning their work so that each activity is conducted safely. SUPERIOR's onsite safety manager will be responsible for ensuring that all crews, including subcontractors, on the project have the appropriate personal protective equipment. This single point of contact for all safety related matters will provide, and ensure for a common, consistent, and cohesive approach towards safety. Key initiatives that the Safety Manager will utilize include:

- ▶ **Worker Safety and Health Orientation:** All employees and subcontractors will be given safety orientation prior to mobilizing to the project site to ensure expectations are clear.
- ▶ **Stop Work Authorization:** Each worker is empowered and authorized to stop unsafe work activities.
- ▶ **Job Hazard Analysis (JHA):** The team will develop a program to identify general project safety hazards. This program will include morning crew meetings identifying each activity for that day; communicating the THA, work zone safety, utility awareness, fall protection requirements, detailed activity plan, subcontractors, material deliveries, and an action plan to recommunicate the daily activities that may change; equipment and material staging, access and egress points; and special events relative to TAFB

- ▶ **Task Hazard Analysis (THA):** Once the project is in the construction phase, crews will participate in Task Hazard Analysis each day to address task specific safety hazards and the measures that will be utilized to ensure worker safety.
- ▶ **Project Inspections:** Weekly safety inspections will be conducted to ensure compliance with appropriate regulations.
- ▶ **Training, Education, and Communication:** Training will be provided and tracked for all on-site personnel.
- ▶ **Incident and Near Miss Reporting:** All incidents and near misses are reported to identify the root cause, and preventative measures are taken to avoid recurrence.

SCHEDULE

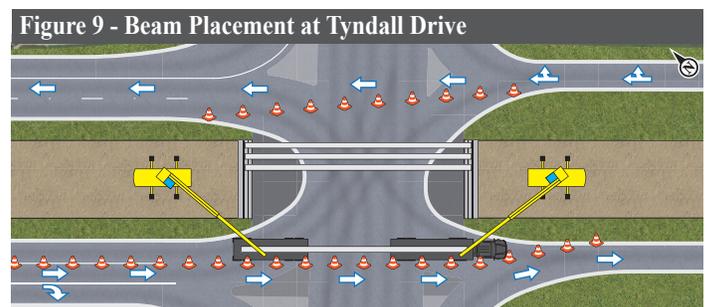
The SUPERIOR Team has developed a detailed schedule for the project, affirming our Team's ability to complete the project in a timely manner. Completion of the project within the allowable 750 calendar day contract duration will depend greatly on an aggressive design deliverable schedule that allows for all required Department and TAFB review time frames. Our proximity to the project will ensure the SUPERIOR Team has sufficient resources dedicated to commence construction activities on the anticipated ROW clear date of February 28th, 2019. Our Team's schedule includes early delivery of the Louisiana Ave. overpass to improve continuity between the Flightline and Support sides of TAFB early in the project.

STRUCTURES CONSTRUCTION

Prior to beginning foundation work on the project, a Pile Driving Plan will be submitted to the Department for review and approval. SUPERIOR will utilize a two-tier fixed template to ensure piles are driven to the allowable tolerances. A test pile will be located at each abutment to develop accurate pile driving criteria for all locations. Pile driving at the end bents will commence at the center of the bent and move outward from the test pile. Casings will be installed behind the MSE walls to allow for pile installation without any issues related to down drag.

End bents will be constructed behind wraparound MSE retaining walls. Once the end bents are completed, the Team will place FIBs across the span in off-peak hours to reduce traffic impacts. Stay-in-Place (SIP) forms will be installed between the beams. Installing the SIP's and overhang falsework over traffic will be completed at night under lane closures. Overhangs will remain in place until the bridge decks and railings are cast to provide a safe work zone over traffic.

Beam Placement at Tyndall: The SUPERIOR Team has developed a TTCP plan that optimizes beam placement at Tyndall Dr. and Louisiana Ave., minimizing the impacts of this work to Base Operations. In lieu of full weekend closures impacting all lanes of traffic, our plan will utilize overnight off-peak hour, short-term (no longer than 20 minute) lane closures to erect beams. One thru lane of traffic will be maintained at all times, while the beam haul truck is pulled into a closed lane of the intersection. SUPERIOR will then use two cranes, one at each abutment on top of fill, to pick and set each beam. Once each beam is erected and secured, traffic will resume normal operations while the next beam is staged. All beams needed for the complete span will be delivered and staged on site, in a designated staging area, prior to the nighttime construction (see Figure 9). This beam placement plan will



allow SUPERIOR to maintain emergency vehicle and base access at all times.

ROADWAY CONSTRUCTION

Our construction plan uses proven strategies and methods to expedite construction and reduce impacts to the public and environment. This all-inclusive approach includes early works packages that break free up-front work while accommodating expanded design and review times for more complex project elements. Examples of work included in these early works packages include preliminary TTCP, erosion control, and clearing and grubbing.

Concrete Pavement TTCP at Tyndall Drive/Airey Avenue: Our plan to construct the concrete pavement will maintain at least one lane in each direction on SR 30 at all times. We will also maintain at least one lane at the Tyndall Gate at all times and utilize the new connection at Louisiana Avenue as needed to cross traffic between the Support and Flightline sides of the base. We will always maintain ingress/egress from the Flightline side, including maintaining a left turn lane on SR 30.

We will NOT need a complete closure of the Tyndall or Flightline side gates with our proposal and will always maintain access to and from the Tyndall Gate on the Flightline side.

The Concrete pavement will be completed in 4 steps, as detailed in **Figure 10**. Step 1 construction is completed early in Phase 2, during normal working hours, prior to overpass construction. The remaining steps will be constructed after the Tyndall Dr. and Louisiana Ave. bridges are complete during off-peak weekends with partial lane closures.

- ▶ **Phase 1** - The new concrete ramps for the Tyndall interchange will be constructed outside the footprint of the existing roadway. This intersection will operate under the existing signal.
- ▶ **Phase 2, Step 1** - Partial intersection construction on the Support side of Tyndall Dr. will be constructed during a weekend shift, maintaining right movements into and out of the Support side gate. The Flightline side gate will remain functional in this step. The left turn from the Flightline side to WB SR 30 will be detoured through Louisiana to Airey Ave.
- ▶ **Phase 2, Step 2** – One left turn lane into Flightline side, and the northeast side of Tyndall Dr.. will be constructed during a weekend

shift. Both gates will remain functional in this step, including a left turn movement from EB SR 30 to the Flightline side, and through movements to the Flightline side and Support side, with a detour along Louisiana to Tyndall Ave. and Airey Ave.

- ▶ **Phase 2, Step 3** – The second turn lane into Flightline side, and the northwest side of Tyndall Dr. will be constructed during a weekend shift. Both gates will remain functional, including a left turn movement from EB SR 30 to the Flightline side, and through movements to the Flightline side and Support side, with the use of a temporary signal. The left turn from the Flightline side to WB SR 30 which will be handled with a detour along Louisiana Ave.

Emergency Access: Emergency vehicle access will be maintained during all phases of construction, providing a link between both the Flightline and Support sides of the bases, as well as accommodating U-turns to support emergency operations on the Dupont Bridge. Geometry will be established to allow for fire truck, ambulance, and police vehicles expected during emergency response.

Earthwork: Pond excavation and embankment activities will be phased and balanced to maximize efficiency and reduce the off-site material needed. Dewatering efforts, when necessary, for pond excavation will utilize sock drains to ensure any discharge is clean and free of turbidity.

Haul Plan and Routes: The Team will develop a haul plan that will identify the sources of material, haul routes with the least impact to public, identify ingress/egress locations on-site, and provisions for spotters as necessary. Spotters will be used to ensure that trucks backing up have a clear path free of obstructions such as personnel and equipment. The SUPERIOR Team's optimized vertical profile design will eliminate 8,000 CY or over 1,000 loads of fill to be delivered on the project, reducing cost and schedule and increasing safety to the traveling public.

Asphalt Construction: SUPERIOR will utilize an asphalt plant located near the project. Crews will utilize a material transfer vehicle for all friction course and on structural mixes where necessary to ensure a quality ride and to avoid end of load segregation.

DRAINAGE CONSTRUCTION

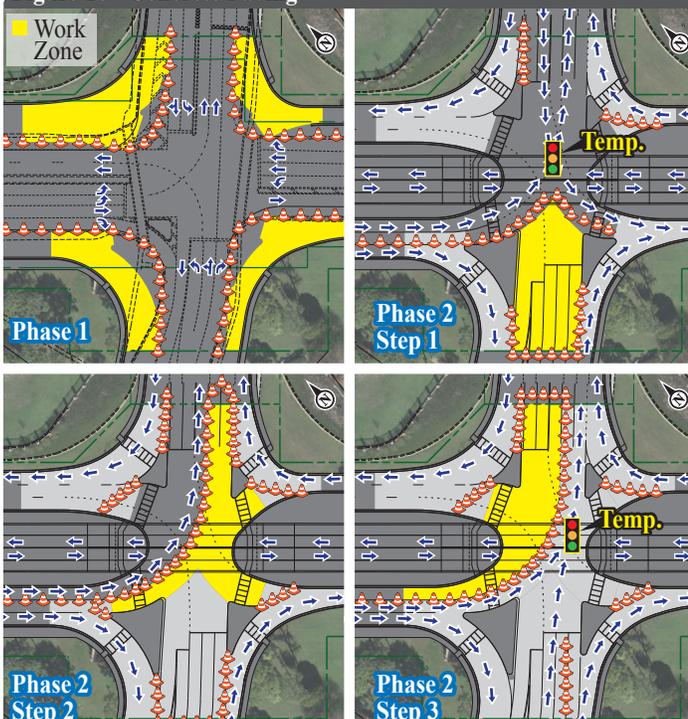
Our drainage design includes the use of ditches and swales to minimize the installation of storm drainage piping and potential impacts with utilities, along with dry ponds to conform to FAA rules. To ensure these ponds function as intended, crews will stage the construction to leave the last six inches of soil in place during the initial excavation. Once the project has been stabilized and there is reduced sediment transport into the dry ponds, crews will complete the excavation of the ponds and final grading to the required elevation. Our design has also eliminated most deep installations of pipe systems. This has been implemented to provide for a safer work site and to make maintenance simpler and safer.

CONSTRUCTION COORDINATION PLAN MINIMIZING CONSTRUCTION CHANGES

The importance of project coordination cannot be overstated. Internal coordination will include continuous collaboration between the Design and Construction Teams through regularly scheduled planning and progress meetings. External coordination will include weekly progress meetings with FDOT, the CEI Team, TAFB representatives, and relevant stakeholders to review upcoming activities/submittals, track progress, and develop solutions to issues well in advance of their impact to design, and/or construction activities. Additional key components of our Construction Coordination Plan include:

- ▶ Tracking all PD&E commitments
- ▶ Coordinating design and construction with on-going work
- ▶ Upfront, early, and continuous coordination with NFWFMD, FDEP, TNR, and FDOT's Environmental Management Office to expedite permit modifications and ensure compliance

Figure 10 - Concrete Paving





- ▶ Continuous communication with utility owners along the project corridor during both design and construction
- ▶ Specific constructability reviews integrated into the Design Quality Management Plan for all project phases

Construction Quality Control (QC) Plan: Our Team will develop a comprehensive QC plan specific to this project in accordance with Section 105 of the FDOT specifications to verify, check, and maintain control of key construction processes. The implementation of this plan will be managed by SUPERIOR’s QC Manager Kevin Born to provide the Department with one point of contact for all QC-related issues.

Sampling, testing, and reporting of all materials will be in compliance with FDOT’s Sampling, Testing and Reporting Guide (STRG). In addition, we will prepare and submit a Job Guide Schedule (JGS) using the Materials Acceptance and Certification (MAC) system. Our approach to resolving potential quality concerns is to immediately identify the issue, communicate with the Department regarding the issue, and select and implement the desired solution without additional costs or delays.

MINIMIZING IMPACTS THROUGH CONSTRUCTION

The SUPERIOR Team will minimize specific impacts through construction as summarized below:

Task	Approach
Environment	Reduce wetland impacts by narrowing the construction envelope, decreasing impacts and associated mitigation costs by approximately 43%. In addition, sea turtle nesting impacts will be mitigated by aiming and shielding construction lighting away from the beach during active nesting seasons.
Public	Minimize visual obstructions and channelize construction traffic to maintain separation between the work zone and public.
Adjacent Properties	Utilize our project-specific TAFB construction liaison to coordinate activities with base personnel.
Structures	Erect beams utilizing dual cranes out of traffic at night to minimize gate closures and impacts to the TAFB traffic.
Tyndall AFB traffic	Use an optimized design that reduces the amount of embankment, subsoil remediation, and gate closures to keep traffic flowing.

IMPLEMENTATION OF THE ENVIRONMENTAL DESIGN AND EROSION/SEDIMENT CONTROL PLAN

SUPERIOR has extensive experience building a similar project on SR 30 at Hurlburt Field along with our current project in Panama City at SR 30 and SR 368. We will implement Best Management Practices to prevent sediment from entering St. Andrews Bay, St. Andrews Sound and ultimately the Gulf of Mexico. SUPERIOR will take proper measures during the import of large quantities of embankment at the bridge approaches over Tyndall Dr. and Louisiana Ave.

On our nearby Panama City SR 30 and SR 368 project, we have imported over 100,000 CY of borrow material. This local knowledge and experience will help us continue to reduce migration of soils through hauling operations for this project. Well-constructed soil tracking prevention devices that are maintained regularly, consolidation of access points, and diligent supervision of trucks to ensure tailgates are clean and tarps are deployed are all necessary factors in containing soil within the work zone. We will utilize sweepers as a stop gap measure if any of the above methods fail to perform adequately.

We are committed to reducing embankment erosion by staging sod placement as fills are brought up. This is standard practice for SUPERIOR and has been proven to be very effective in reducing cost and increasing efficiency by minimizing slope rework.

IMPLEMENTATION OF THE MAINTENANCE OF TRAFFIC PLAN

Our Traffic Management Plan (TMP) will address Temporary Traffic Control Plans, Transportation Operations, and Public Information. The TMP will provide FDOT a snapshot of activities for alleviating or minimizing work-related traffic delays through traditional traffic handling practices and an innovative combination of various strategies. These strategies encompass public awareness campaigns; motorist information; demand, incident, and system management; efficient construction methods; and alternate route planning. All lane closures will be planned to be performed at night, submitted in writing to the FDOT Construction Engineer’s office for approval and will not occur during inclement weather. Conflicting signage, striping and signalization will be promptly covered or eradicated to avoid user confusion. Roadway shoulders will be clear and clean to allow for escape routes and improvised special detours. Each traffic adjustment will be predicated by a dedicated pre-work briefing and coordination meeting.

INCIDENT MANAGEMENT PLAN

SUPERIOR has a long-standing policy to protect our work zones for the traveling public, workforce, and stakeholder’s personnel. The Incident Management Plan (IMP) will be developed and communicated to all Team leaders prior to construction. This plan will include details addressing major incidents within the project limits and will include provisions for known and likely events so proactive measures can be deployed. These events include:

- ▶ TAFB Family Day and Air Show, Spring Break, and Thunder Beach Spring/Fall
- ▶ Hurricanes and known storm events that could trigger an evacuation
- ▶ Vehicular accidents within the corridor
- ▶ Obstacles/debris in the roadway

Our plan benefits rapid clearing of routes in case major incidents/hurricanes occur. The IMP will establish specific and appropriate early action to clear the roadway and resume traffic to normal operations as soon as possible after an incident. This plan will be available at the project site to all personnel and will detail the steps to follow in the event of an emergency. The Team’s Safety Supervisor (SS) will be the main point of contact during any incident requiring action by the Team, supported by Alex Arabie, MOT Superintendent. The field personnel/supervisors will have immediate contact with SS should an incident arise, and the SS will have direct contact with local police/EMS, and the TAFB to communicate the incident and aid in developing an appropriate course of action.

Our design further facilitates incident management with the following:

- ▶ A revised TTCP Plan that will shift all traffic to the north side of the project, eliminating interaction between construction and the public
- ▶ Maintaining turn lanes to reduce traffic impacts to TAFB
- ▶ An on-call tow-truck for quick removal of vehicles (minor accidents/stalled vehicles)
- ▶ Reporting of any hazardous material spills to the Department and the designated Remediation Contractor as well as coordination and assistance as needed for its safe containment and/or removal

UTILITY COORDINATION AND CONSTRUCTION

SUPERIOR has extensive experience working around congested utility corridors as evidenced on our nearby SR 30 at SR 368 project, where we have repeatedly worked around utilities. We have also worked with most of the UAOs present along SR 30. SUPERIOR’s Utility Coordination Manager John Murphy will utilize the One-Call system in addition to coordinating with TAFB to locate existing utilities throughout construction of the project. Crews will also hand dig around utilities in critical areas for the protection of the existing facilities.

We understand we will be responsible for the relocation of TAFB maintained sewer and communication lines. Any relocation or adjustment



of Tyndall maintained utilities will be prioritized in our schedule to ensure timely completion of the work.

PLAN FOR ADHERING TO PROJECT ENVIRONMENTAL COMMITMENTS

The SUPERIOR concept plans and construction approach is tailored to meet all the commitments listed in the RFP. These commitments were made by the Department throughout the project development and will be continued throughout the design and construction duration. The RFP identified the Environmental commitments from the approved EA, FDOT FONSI, Tyndall AFB FONSI/FONPA and Project Commitment Tracking form. These commitments include:

- ▶ Black Bear
- ▶ Gopher Tortoise
- ▶ Bald Eagle
- ▶ Sea Turtles
- ▶ Staging
- ▶ Stormwater Ponds
- ▶ Chapel
- ▶ Hazardous materials
- ▶ Wetlands Mitigation
- ▶ Cultural resources-building 703-Chapel
- ▶ Structure Height Clearance
- ▶ Ground Obstruction
- ▶ Pond Location
- ▶ Dig Permit Form
- ▶ Security Fence

INNOVATION

MINIMIZE OR ELIMINATE UTILITY RELOCATIONS

Identified utility relocations will be reduced by:

- ▶ Utilization of drainage flumes, swales in lieu of pipes/structures and re-routing of pipes results in a 43% reduction in utility conflicts.
- ▶ Realignment the westbound on/off ramps at Tyndall Dr. towards the north reducing impacts to the buried fiber optic lines along the ramp.

MATERIALS

The SUPERIOR Team will use quality materials in construction of the project, including value-added and innovative enhancements. One area of innovative material use is in the area of lighting, where luminaires will be retrofitted with house-side shields to prevent light intrusion into sensitive sea turtle habitat.

In addition, 6” thick sidewalks (as used in concrete driveways) will be used in all curb islands and pedestrian ramps, providing enhanced durability over standard 4” thick material. This reduces long term maintenance associated with overtracking and resulting damage to these features.

WORKMANSHIP

We are confident in our ability to provide the Department with lasting durability and an overall quality product as evidenced in our extended warranties shown in the **Value-Added Table** on the following page. Our staff of experienced professionals deliver an exceptional product through every step of the process with their thorough knowledge of construction practices and materials. We will work closely within the Team to develop standard details that can be used repetitively on the project. This will increase efficiency, reduce field changes and improve overall quality.

ENHANCE DESIGN AND CONSTRUCTION ASPECTS RELATED TO FUTURE EXPANSION OF THE TRANSPORTATION FACILITY

While there are few opportunities to accommodate future improvements, the SUPERIOR Team has provided a design that eliminates the need for enhancements or retrofit after the project’s construction is complete. An excellent example of this is our value-added enhancement where all right-hand turn movements at the interchange are designed to accommodate a WB-62FL design vehicle, recognizing that large vehicles will often be used to service the base.

VALUE ADDED

BROADENING EXTENT OF THE VALUE ADDED FEATURES OF THIS RFP WHILE MAINTAINING EXISTING THRESHOLD REQUIREMENTS

With the addition of concrete pavement at Tyndall Dr., the SUPERIOR Team has included specification 355 for value added concrete pavement for a duration of six years broadening the standard five year warranty. Please refer to the **Value Added Warranty Table** on the following page for complete warranty details.

EXCEEDING MINIMUM MATERIAL REQUIREMENTS TO ENHANCE DURABILITY OF PROJECT COMPONENTS

SUPERIOR will provide 5,500 PSI concrete for all substructure and superstructure concrete on the Project. As noted above, 6” thick sidewalks will be used in all curb islands and pedestrian ramps, providing enhanced durability over standard 4” thick material. This reduces long term maintenance from overtracking and resulting damage to these features.

PROVIDING ADDITIONAL VALUE ADDED PROJECT FEATURES PROPOSED BY THE DESIGN-BUILD FIRM

- ▶ SUPERIOR will provide an upgraded WB-62FL turning design for the right-hand turn movements into and exiting the base at Tyndall Dr., both Support and Flightline side.
- ▶ Shown in the table on Page 10, the added value enhancements will provide FDOT additional durability and life cycle, while enhancing long-term maintenance and reducing cost to the Department.
- ▶ All curb ramps and islands will be constructed using 6” thick concrete, improving durability over conventional 4” concrete sidewalks.
- ▶ Include shields for lighting to prevent confusion to nesting turtles.
- ▶ SUPERIOR will provide additional Air Force Symbol insignias within the MSE Walls. These will be coordinated with TAFB.

TYNDALL AFB COORDINATION PLAN

The SUPERIOR Team understands this project will require constant coordination between the Contractor, TAFB representatives and the Department’s CEI. To ensure consistency in the coordination efforts, The SUPERIOR Team will assign a sole point-of-contact, Alex Arabie, to act as the TAFB Coordinator. Alex will serve in this assigned position for the duration of the project. He will be the liaison between the design/construction personnel and TAFB for all correspondence. He will also be responsible for securing an approved Dig Permit (TAFB IMT 103A) and obtaining required security clearances for key project personnel. Alex will work with our subcontractors to ensure continuity in the security screening and badging process.

The SUPERIOR team will limit all crane boom heights not to exceed 180’ and all will be appropriately lit and/or marked while in use on the project. SUPERIOR will ensure routine maintenance is conducted on all cranes for continual operation of clearance lights and boom down cranes when not in use for extended periods of time. The Team will contact the FAA’s Air Traffic Crane Specialist prior to mobilizing any cranes to the project and abide by all FAA crane requirements. The TAFB Coordinator will notify TAFB Airfield Management prior to assembling the cranes within the Airport Operations Area.

MAINTAIN BASE SECURITY

The SUPERIOR Team understands the sensitive nature of this project and will remain within FDOT’s perpetual easement in all phases of design and construction. We will be proactive in our coordination with TAFB regarding temporary access for items such as detour signs, etc. The SUPERIOR Team will coordinate all work efforts inside TAFB through a dedicated point-of-contact and will ensure all required staff and subcontractors complete the required security screening and badging in compliance with TAFB security protocols.



STORMWATER DESIGN AND CONSTRUCTION RELATED TO ADJACENT TYNDALL AFB FACILITIES

SUPERIOR will maintain positive drainage throughout the project. Drainage construction will commence at the lowest point or pond and continue up 'grade'. Our design and construction activities will ensure all storm water will remain within the project limits, and ultimately, be discharged meeting all permit requirements. Our Team will have an on-call readiness team available to address major storm events.

EQUIPMENT FREQUENCY RESTRICTIONS

The SUPERIOR Team understands that all equipment that emits or operates on a Radio Frequency used in connection with this project must not operate on the following frequencies: 138-150.9 MHz, 225-400 MHz, 406-420 MHz, and 900-928 MHz. SUPERIOR has extensive experience coordinating with airports and military installation, including our recent work in D3 adjacent to Hurlburt Field. We understand radio frequencies used on site must be approved by the Tyndall Installation Spectrum Manager. A Frequency Manager clearance will be obtained by SUPERIOR before operating equipment and instrumentation. All concrete pump trucks used for placement of superstructure and substructure concrete will be equipped with wired remotes as to not conflict with restricted radio frequencies.

DIG PERMIT PROCESS

Prior to any earth disturbing activities SUPERIOR will coordinate with TAFB to secure an approved Dig Permit. Having gone through the process of applying for and obtaining the TAFB Civil Engineering Work Clearance (Dig Permit) to conduct further geotechnical investigation on this project, the SUPERIOR team fully understands the importance of conveying accurate work zone information to all of the base organizations. The Dig Permit will be continually updated throughout the project as work areas change.

REVIEWS AND APPROVALS NECESSARY FOR THE PROJECT

The SUPERIOR Team will, in addition to those outlined in the "DESIGN COORDINATION PLAN MINIMIZING DESIGN CHANGES" Section, coordinate with FDOT and TAFB to review and approve specific design elements on the project to ensure materials and aesthetics are consistent with TAFB's vision. All reviews will be scheduled in accordance with the Design Deliverable Schedule and updated as events change to advance the schedule. Should an event show negative float, an action plan will be immediately developed, and the issue resolved.

TRAFFIC CONTROL

The SUPERIOR Team will develop a TMP and work zone traffic control plan allowing efficient construction of the project while providing a safe work zone for motorists and construction personnel. In addition to maintenance of traffic, the SUPERIOR Team's approach will fully support the Air Force's mission. This involves close coordination with base officials to ensure critical military activities are not disrupted by construction.

TYNDALL AFB AESTHETIC ELEMENTS

Air Force Insignia: The SUPERIOR Team will install MSE Wall panels bearing the Air Force Symbol within the vertical fractured fin panels at all bridge approach ramps. The Air

Value Added Warranty Table				
Broadening the Extent of the Required Value Added Features	Duration (Years)		Measurable Standards	Remedial Work
	Standard	SUPERIOR		
Required Value Added By SUPERIOR				
Asphalt Pavement	3	5	Spec. 338	Table 338-1
Bridge Components	5	7	Spec. 475	Spec. 475
Concrete Pavement	5	6	Spec. 355	Spec. 355
Additional Value Added By SUPERIOR				
Roadway				
Roadway Signage	1	5	Spec. 700 & 994	*1, *6
Guardrail	1	5	Spec. 536	*1, *2
Roadway Drainage	1	5	Soil/Water leaking into structure	*1, *5
MSE Retaining Walls	1	5	Panel cracks & spalls	*1, *4
Structures				
Approach Slabs	1	7	Spalls > 1" Depth	*1, *3
Substructure – concrete	1	7	Spalls > 1" Depth	*1, *3
Superstructure – concrete	1	7	Spalls > 1" Depth	*1, *3
Prestressed Concrete Piling	1	7	Settlement	*1, *6
Prestressed Beams	1	7	Spec. 400-21	*1, *3
Post Tensioning	1	3	Spalls > 1" Depth	*1, *3
Neoprene Bearing Pads	1	7	Spec. 400	*1, *6
Lighting				
All components as per 725-1; exceptions as per 725-5.1	3	5	Not functioning	Spec. 725-5.3
Lamps, ballasts & photo-electric switches	2	3	Spec. 725	Spec. 725
Adhesion & color retention on painted light poles & bracket arms; other exceptions as per 725-5.2	5	6	Spec. 694	Spec. 725
ITS				
All ITS components	Var.	Std.+1	Spec. 783, 785, 786	Spec. 783, 785, 786
*1 Work plans will be on a case-by-case basis *2 Repair/replace element failing to function properly *3 Repair cracks as per Spec. 400-21 and/or patch spalls with APL grout *4 Remove, repair and/or replace panels *5 Seal joints, pipe lining, and/or desilting *6 Determine cause and develop corrective action plan				

Force Symbol will be inset on a smooth panel surface and installed at regular intervals down each wall at the ramps and under the bridges at both the Tyndall Dr. /Airey Ave. and the Louisiana Ave. Bridges. SUPERIOR will also install the Air Force Symbol on the outside of the cheek walls.

Tyndall AFB Sign Structure: Prior to construction of the replacement sign structure at the Tyndall Rd./Airey Ave. entrance, our Team will submit for approval an illuminated sign structure similar in appearance and maintainability of the existing sign. To ensure accuracy in the selection of materials, SUPERIOR will provide a scaled 'Mock-Up' of the sign structure for final approval by TAFB.

OUR COMMITMENT

The SUPERIOR Team is committed, equipped and prepared to exceed your goals with design and construction experts, local knowledge, technical solutions, and innovative design and construction practices. SUPERIOR alone has managed 28 design build contracts exceeding \$836M in construction value. We have demonstrated throughout the procurement process that our team has the design and construction expertise to deliver on those promises. The SUPERIOR Team looks forward to being your design builder of choice on this important project.

Plans, Technical Special Provisions





The **SUPERIOR TEAM**'s Preliminary Plans can be found in **Volume 2 (11x17 Plans)** and in **Volume 3 (Roll Plots)** of this submittal.

The Technical Special Provisions can be found following this page.



TECHNICAL SPECIAL PROVISION
FOR
TRAFFIC CONTROLLER ASSEMBLY
FINANCIAL PROJECT ID: 431684-1-52-01, 431684-56-01
BAY COUNTY

The official record of this Technical Special Provision has been electronically signed and sealed using a Digital Signature as required by Rule 61G 15-23.004, F.A.C. Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

Professional Engineer: Anna Zhang, P.E.
Date: April 16, 2018
Fla. License No.: 82429
Firm Name: GAI Consultants, Inc.
Firm Address: 1301 Riverplace Blvd., Suite 900
City, State, Zipcode: Jacksonville, Fl 32207
Certificate of Authorization: 9951
Pages: 1 - 2



SECTION T670 TRAFFIC CONTROLLER ASSEMBLY

T670-1 Description.

Furnish and install NEMA TS2 Type 1 traffic controller assembly in accordance with FDOT Specification 670.

T670-2 Materials and Equipment.

T670-2.1 General: Ensure traffic controller equipment is fully compatible with the existing Bay County Traffic Management System.

T670-2.2 Controller: Provide NEMA TS2 Type 1 Model 980-A2100, Ethernet-enabled controller, and associated equipment configured for compatibility with the Bay County Traffic Management Center's central software.

T670-2.3 Malfunction Management Unit: Provide TS2 Ethernet-enabled Malfunction Management Units with LCD display and software configured for communications with the existing Bay County Traffic Management System across the traffic signal communication network.

T670-2.4 Controller Cabinet: Provide a NEMA wired cabinet assembly TS-2 Size 6 cabinet with concrete foundation.

T670-3 Method of Measurement.

In accordance with FDOT Specification 670.

T670-4 Basis of Payment.

In accordance with FDOT Specification 670.



MODIFIED SPECIAL PROVISION APPROVAL REQUEST

Date: 04/16/2018 **District:** Three **Type:** Project Specific

Letting Month: May 2018 **FPID Numbers:** 431684-1-52-01
431684-1-56-01

Requested by: GAI Consultants, Inc. **Office/Phone:** 407-423-8398

Specification being modified: 346-3.1 Table 2, 346-4.1 Table 3, & 346-9.2 Table 8

Affected Pay Items: N/A

***Expected Cost Impact to this project:** N/A

Project Description: The project includes design and construction of a SPUI at the Tyndall AFB main gate, and a second bridge over Louisiana Avenue in Bay County, Florida.

Background Data: Concrete with a required minimum 28-day compressive strength of 10,000 will be used to increase the capacity of the prestressed beams. It has been determined that a 10,000 psi concrete can be provided, after coordinating with a local concrete precaster. The tables of Standard Specification 346 do not include 10,000 psi concrete. The tables have been expanded to include 10,000 psi concrete.

***Name and PE Number of PE signing and sealing the Modified Special Provision:**

* Project Specific Modifications to the Standard Specifications or Workbook Specifications must be signed and sealed by the Professional Engineer responsible for this Special Provision under the following statement and kept in the Project Files maintained in the District.

PE Name: Sinan Buyukaksakal, P.E. **PE Number:** 56929

I hereby certify that this Specification was prepared under my responsible charge, and that it has been reviewed in accordance with procedures adopted and implemented by the Florida Department of Transportation.

The official record of this Special Provision has been electronically signed and sealed using a Digital Signature as required by 61G15-23.004, F.A.C. Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

Prepared by: Sinan Buyukaksakal, P.E.
Date: April 16, 2018
Fla. License No.: 56929
Firm Name: GAI Consultants Inc.
Firm Address: 618 East South Street Suite 700
City, State, Zip code: Orlando, FL 32801
Certificate of Authorization: 9951
Page(s): 1-3

SECTION 346
PORTLAND CEMENT CONCRETE

SUBARTICLE 346-3.1 Table 2 is expanded and edited as follows:

Class of Concrete	Specified Minimum Strength (28 day) (psi)	Target Slump Value (inches) (c) (g)
VII (d) (f)	10,000	3 (b)

(a) For precast three-sided culverts, box culverts, endwalls, inlets, manholes and junction boxes, the target slump value and air content will not apply. The maximum allowable slump is 6 inches, except as noted in (b). The Contractor is permitted to use concrete meeting the requirements of ASTM C478 4,000 psi in lieu of Class I or Class II concrete for precast endwalls, inlets, manholes and junction boxes.

(b) The Engineer may allow a higher target slump when a Type F, G, I or II admixture is used, except when flowing concrete is used. The maximum target slump shall be 7 inches.

(c) For a reduction in the target slump for slip-form operations, submit a revision to the mix design to the Engineer.

(d) When the use of silica fume, ultrafine fly ash, or metakaolin is required as a pozzolan in Class IV, Class V, Class V (Special), ~~or Class VI~~ or Class VII concrete, ensure that the concrete meets or exceeds a resistivity of 29 KOhm-cm at 28 days, when tested in accordance with AASHTO T358. Submit three 4 x 8 inch cylindrical test specimens to the Engineer for resistivity testing before mix design approval. Take the resistivity test specimens from the concrete of the laboratory trial batch or from the field trial batch of at least 3 cubic yards. Verify the mix proportioning of the design mix and take representative samples of trial batch concrete for the required plastic and hardened property tests. Cure the field trial batch specimens similar to the standard laboratory curing methods. Submit the resistivity test specimens at least 7 calendar days prior to the scheduled 28 day test. The average resistivity of the three cylinders, eight readings per cylinder, is an indicator of the permeability of the concrete mix.

(e) When precast three-sided culverts, box culverts, endwalls, inlets, manholes or junction boxes require a Class III concrete, the minimum cementitious materials is 470 pounds per cubic yard. Do not apply the air content range and the maximum target slump shall be 6 inches, except as allowed in (b).

(f) When the concrete does not require a minimum resistivity of 29 KOhm-cm at 28 days, highly reactive pozzolans may be used outside the lower specified ranges to enhance strength and workability. Testing in accordance with AASHTO T358 is not required.

(g) The Engineer may allow a higher target slump when a Ternary Blend is used. The maximum target slump will be 7 inches.

SUBARTICLE 346-4.1 Table 3 is expanded as follows:

Class of Concrete	Minimum Total Cementitious Materials Content pounds per cubic yard	Maximum Water to Cementitious Materials Ratio pounds per pounds*
VII	752	0.37**
<p>*The calculation of the water to cementitious materials ratio (w/cm) is based on the total cementitious material including cement and any supplemental cementitious materials that are used in the mix. **When the use of silica fume or metakaolin is required, the maximum water to cementitious material ratio will be 0.35. When the use of ultrafine fly ash is required, the maximum water to cementitious material ratio will be 0.30.</p>		

SUBARTICLE 346-9.2 Table 8 is expanded as follows:

Class Concrete*	Maximum LOT Size
VII	50 cubic yards, or one day's production, whichever is less
<p>*For any class of concrete used for roadway barrier wall, the lot size is defined as 100 cubic yards, or one day's production, whichever is less.</p>	